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DACUS SPHAERISTICUS SPEISER, AND TWO PREVIOUSLY UNDESCRIBED SPECIES OF AFRICAN DACINAE (DIPT. TRYPETIDAE)

By H. K. Munro, B.Sc., F.R.E.S.

The Dacinae form a very distinct group among the Trypetidae, and it is interesting to note that they may be divided into groups according to the presence or absence of certain bristles or setae on the thorax. Further, there is a striking parallelism among other characters such as the yellow hypopleural spots, the wing-pattern, and so on. The omission, therefore, of a record of the bristles, more especially of the anterior supra-alar bristle, is apt to lead to confusion. The following notes correct what I have every reason to believe was an incorrect determination due to such a cause.

Dacus sphaeristicus Speiser.

Speiser, 1910, *Schwed. zool. Exp. Kilimandjaro-Meru*, **2** : 183.

After considering published data and examining various specimens, it seems that Speiser's species has not been re-discovered since the original specimen from Kilimandjaro was described. On reading his description, it will be noted that although it is not as complete as could be desired, certain definite information is given; it is unfortunate, however, that nothing is said as to whether the anterior supra-alar bristle is present or absent. It is to be regretted, therefore, that when in 1915 Bezzi * examined a male that appeared to fit Speiser's description, he did not make sure on this point, but assumed that it belonged to Speiser's species, which would thus have an anterior supra-alar bristle, one being present in the specimen. The mistake was repeated by Collart † in 1935.

As the type of *Dacus sphaeristicus* is in the Naturhistoriska Riksmuseum in Stockholm, I wrote to Dr. Y. Sjöstedt in September 1935, asking him " are the anterior supra-alar bristles present in the type of *Dacus sphaeristicus* ? If they appear to be absent is there any indication, *i.e.* the presence of an alveolus just above the front margin of the wing at the edge of the mesonotum, indicating that they have merely been rubbed off, or would you consider they were not present at all ? " In a letter dated 6.xi.35 and signed by Mr. A. Roman, the following statement is made : " Helped by Mr. Malaise, I have studied the two points you want to know in the single type of *Dacus sphaeristicus* Speis. Your specimen seems to be correctly named, for there is no trace of an anterior supra-alar bristle in the place you have mentioned, and the proportions of the antennae (and head) exactly correspond with your figure." (The identity of the specimen mentioned and the shape of the head will be referred to later.)

As far as the wing-pattern is concerned, it may be noted that the first posterior cell is hyaline between the anterior cross-vein and the line of the lower. A more important point, given by Speiser, is that the base of the ovipositor is very short. (" Legeröhre kurz und kräftig, nur so lang als das letzte—5.—Segment davor.") Neither Bezzi nor Collart say anything about

* 1915, *Bull. ent. Res.*, **6** : 91, fig. 4.
† 1935, *Bull. Mus. Hist. nat. Belg.*, **11** : 11.

the length of the base of the ovipositor in the specimens recorded by them as *Dacus sphaeristicus* (see under the following new species). Their specimens may reasonably be assumed to be conspecific with the female to be described here, in which the base of the ovipositor is three times as long as the fifth tergite.

While it is thus evident that the specimens recorded by Bezzi and Collart cannot be Speiser's species, it is necessary to consider whether the latter has not been otherwise re-described. This does not seem to be the case, but some remarks are needed on certain other specimens that are apparently very like *Dacus sphaeristicus*.

In the first place, when I made comparisons * between *Dacus sphaeristicus* and *Dacus lounsburyi* Coq. I had a male that had been determined by Brunetti as *sphaeristicus*, and which I had every reason to consider was Speiser's species. Even at the present time I would still think this correct, only I have lately received from the British Museum, through the kindness of Sir Guy Marshall, a female that I can only regard as of the same species as the male I have, but in this female the base of the ovipositor is longer than the pre-abdomen! At the present moment I am not prepared to say just what species it does represent. The nearest may be *Dacus aspilus* Bezzi,† but the base of the ovipositor would seem to be too long. Bezzi says it is as long as the abdomen, and Collart (*loc. cit.* : 4) confirms this. I have besides another female, also from the British Museum, that belongs to the same group. In this the base of the ovipositor is about as long as the pre-abdomen, but the wing-pattern is slightly different. Finally, it does not seem that *Dacus langi* Curran ‡ can be the male of *D. aspilus* as Curran says in his tables that the large apical cloud fills " all the first posterior cell beyond the discal cross-vein," and in the description, " extending back to well behind the fourth vein," which means that it must fill the outer, upper corner of the discal cell as well.

As regards the shape of the head, I had sent to Dr. Sjöstedt a drawing of the head of the specimen recorded by me * as *sphaeristicus*. Although it resembles the head of the type of *sphaeristicus*, this is of no great specific importance, as the heads (and antennae) of several related species are all much alike; it is anyhow different from that of the species mistaken for *sphaeristicus*.

Dacus masaicus sp. n.

Tridacus sphaeristicus, Bezzi (*nec* Speiser), 1915, *Bull. ent. Res.*, **6** : 91, fig. 4, ♂; 1924, **15** : 82; 1923, *Ann. Mus. Hist. nat. Paris*, **29** : 523, ♀.
Dacus (*Dacus*) *sphaeristicus* Collart (*nec* Speiser), 1935, *Bull. Mus. Hist. nat. Belg.* **11** : 11, ♂♀.

I feel sure that the three specimens, two males and a female, that are before me, belong to the species recorded by Bezzi and Collart as *sphaeristicus* Speiser. That the species cannot be Speiser's has already been shown, and a fuller description is given here to supplement what has been said by Bezzi and Collart, the latter having indicated its probable affinities.

Type ♂, Kenya Colony: Narok, 30.i.14 (*Capt. A. O. Luckmann*); paratype ♂, Kenya: Masai Reserve, 2–25.ii.1914 (*Capt. A. O. Luckmann*); type ♀, Southern Rhodesia: Chirinda Forest, Oct. 1905 (*G. A. K. Marshall*). Types in the British Museum.

A very large, robust, ferruginous species with only a yellow mesopleural stripe and yellow on the scutellum. Length, ♂, 10·0 mm., ♀, 14·7 mm. (the projecting portion of the

* 1928, *Ann. Transvaal Mus.*, **12** : 336.
† 1924, *Rev. zool. afric.*, **12** : 10.
‡ 1927, *Bull. Amer. Mus. nat. Hist.*, **57** (2) : 85.

ovipositor about 3·0 mm.); wing, ♂, 9·5 mm., ♀, 10·6 mm. *Head*, proportions roughly, length 4, height 5, width 6; *occiput* fairly flat above, moderately prominent below, pale ferruginous with moderate yellow margins along the eyes. *Frons* about one-third width of head, roughly one and a half times as long as wide, and a third wider at antennae than at vertex, in the male ferruginous at vertex with black ocellar dot, the large anterior tubercle velvety brown, yellow before the lunule, otherwise light brownish; in the female the coloration of the frons is not well-marked, but is approximately as in the male, only the spots at the bristles are more defined; the two inferior and the single superior orbital bristles are small, the ocellars minute (or may be considered absent), the inner and outer verticals moderate; there is some fine, pale pubescence. *Lunule* red, band-like, merging into the concolorous, rather wide, sutures of the parafacialia. *Face* strongly projecting (about half the length of the eye in profile), the lunule too being well forward; the black spot, comma-shaped in female, more quadrate in male, in each shallow, yellow groove is thus quite visible in a lateral view; the short, broad, median keel is reddish, as are also the grooves in the female. Cheeks narrow, about half width of third antennal joint, yellow, with slight silvery sheen obliquely, a brownish spot above and one below eyes on wider genae. *Antennae:* proportions of the joints approximately 1, 1½ and 4, the first two, close together, are ferruginous, the third black, except for a slight ferruginous base, as is the base of the arista, the flagellum being black and smooth. (The antennae are missing in the female.) Palpi brown and flat, mottled yellow and red. Proboscis short, reddish. *Thorax* large and robust, entirely ferruginous except a rather narrow mesopleural stripe, reaching the sides of the suture, barely touching the sternites in the male, and the yellow scutellum, with in the male a very narrow base, in the female the basal fourth, ferruginous. Bristles black, an anterior supra-alar present, inner and outer verticals, a mesopleural and a pteropleural, two scutellars. Pubescence pale golden; there is slight greyish dust on the dorsum, less on the pleura, more on the sternites. The scutellum is short and rather swollen, its length a little greater than the distance apart of the bristles. *Legs* ferruginous, except the basal half in male (third in female) of hind femora yellow, all metatarsi yellow, and rest of tarsi pale, the hind tarsi, especially the metatarsi, with long golden hair. Halteres yellow. The *wing* is that given in Bezzi's 1915 paper in the Bulletin of Entomological Research. It may be noted that there is a slight, faint, infuscation along the veins, rather widely along the fifth vein and the end of the lower cross-vein. In shape the wing has an elongate-oval appearance, as the costa is more strongly arched than is usual among the Dacinae. *Abdomen* large, ferruginous, with a moderate yellow fascia on each side of the hind margins of the second segment in the male, weak in the female, the sunken areas on the last segment also yellow. Pubescence long, golden. Third segment in male ciliate. Venter and male genitalia ferruginous. Base of ovipositor of normal shape, moderately swollen basally, narrowed apically; ferruginous; nearly three times (4·25 mm.) the length of the fifth segment (1·5 mm.). Venter and membranes ferruginous.

Dacus pleuralis Collart.

Collart, 1935, *Bull. Mus. Hist. nat. Belg.*, **11** : 11.

This is very briefly noted as a variety with a single, large hypopleural spot, of what was taken to be *Dacus sphaeristicus* Speiser. In view of what has been said, it hardly seems sufficiently characterised for recognition.

Dacus taurus sp. n.

There is a single female specimen from Southern Nigeria (Ibadan, 13.x.13, *Dr. W. A. Lamborn*) of this large species. It is very like *Dacus masaicus*, only blacker, and has a pair of rather widely-spaced yellow hypopleural spots. In

Collart's tables (*loc. cit.*) it runs to his species *fumosus*, but has the large apical cloud more restricted.

♀. The type is the specimen recorded above in the British Museum. A large robust, blackish species. Length, 14·5 mm. (the projecting portion of the ovipositor about 3·0 mm.), wing, 11·0 mm. *Head*, proportions roughly, length 4, height 5, width 6. *Occiput* normal, dull blackish without yellow margins on the eyes. *Frons* one and a half times as long as wide at vertex, where it is one-third width of head, a little wider at antennae; dull yellowish-ferruginous, darker and shining across vertex and black ocellar dot, the anterior tubercle dull velvety reddish-brown; bristles short, two inferior and one superior orbital, ocellars minute (or may be considered absent); slight pale pubescence. *Lunule* dull ferruginous, band- or strap-like, continuous with the parafacial sutures as in *masaicus*. *Antennae* ferruginous, third joint blackened, second a little longer than the first, third nearly three times as long; arista ferruginous at base, flagellum smooth and black. *Face* triangular, mid-line about half length of parafacial line, flattish, not as strongly prominent as in *masaicus*, the broad yellowish-ferruginous keel has a slight prominence in the middle; the yellowish, shallow grooves slightly pollinose, with an irregularly-shaped, black spot. Cheeks yellowish, half width of third antennal joint, genae yellow with a dark spot below eye. Palpi yellowish, wide and flat, with slight dark pubescence; proboscis short, reddish. *Thorax* robust, punctate, blackish-ferruginous, humeri yellowish, more yellow in front, on dorsum short yellow pubescence and slight grey pollinose stripes anteriorly; the mesopleural stripe narrow, just touching the sternites and reaching the sides of the suture; a pair of well-defined, widely-separated, yellow hypopleural spots. *Scutellum* short, rather swollen, discoloured in specimen, but apparently yellow with moderate ferruginous base. Bristles black, inner cervicals weak, outer stronger, anterior supra-alar present, one mesopleural, one pteropleural, two scutellars. *Halteres* white. *Legs:* coxae shining blackish, otherwise ferruginous, the front femora darker, basal two-fifths of hind femora yellow, also metatarsi and apical tarsi and pulvilli. *Wing* closely similar to that of *D. masaicus*, the costa also arched and the pattern and venation similar; the veins are more heavily margined with brown, that on the fifth vein extending half-way across third posterior cell and filling its outer end; the rest of the wing has a soft, yellow suffusion, except the extreme base of the first basal, the second basal, the inner corner of the axillary cell and the alula clear hyaline; the stigma is somewhat darker than the rest of the costal band. *Abdomen* punctate, blackish, with strong yellow fasciae on sides of hind margin of second segment, the apical patches yellow; yellow pubescence short, but longer than on thorax. Base of ovipositor ferruginous, with slight pale pubescence, moderately bulbous on basal half, its length (4·25 mm.) about three times that of fifth tergite (1·5 mm.). Sternites and membranes ferruginous.

OBSERVATIONS ON SPECIES OF PAPILIONIDAE, PIERIDAE AND DANAIDAE FROM THE MALAY PENINSULA

By A. Steven Corbet, D.Sc., Ph.D., F.R.E.S.

It has long been established that, as late as the close of the Tertiary era, the great islands of Sumatra, Java and Borneo were united with the present Malay Peninsula; but the history of the land connection between this continent and the mainland of Asia is less certain. There is evidence suggesting that, in comparatively recent times, the present Malay Peninsula was separated from the Asiatic mainland by an arm of the sea and that this former channel was situated in Kedah. Further biological data are required to confirm this interesting point, which has received little attention since Ridley investigated the plant life of this area.

Another matter on which there is a paucity of data concerns the past history of some of the islands off the Malayan coasts.

It is anticipated that an extensive collection of Lepidoptera, made by my wife and myself in Malaya and the neighbouring countries over a period of five years, will throw further light on these and allied problems.

A considerable amount of taxonomic work has been a necessary prelude to any further investigations, but it can be stated now that such work has already elicited the following facts regarding the distribution of Rhopalocera in Malaya.

(*a*) Many species from north Kedah and the Langkawi Islands show common features which differentiate them from the corresponding forms on the Peninsular mainland south of Kedah, and a few Kedah species do not otherwise extend into the Malaysian subregion.

(*b*) A number of the lowland species of the north Kedah–Langkawi fauna are strictly montane in the Peninsula proper.

(*c*) No instance has been found where the montane representatives of Malayan species show any constant differences from the same species when they occur on the plains.

(*d*) In one or two instances only do the forms of strictly montane species differ from one mountain range to another.

(*e*) A number of the species from the east coast island of Tioman are subspecifically distinct from the corresponding forms from the Peninsular mainland and Borneo.

Reference is made here to these matters in order to make clear the purpose which instigated the systematic work to be described in the present and in forthcoming publications.

Unless stated otherwise, the types of newly-described forms are in my collection, but all holotypes will be assigned to the British Museum, to the Trustees of which I am indebted for facilities for studying the collections.

Papilio paradoxa aenigma Wall.

The males of f. *aenigma* Wall. and of f. *aegialus* Dist. from Malaya and Sumatra appear not to show any constant differences, except, perhaps, that the Malayan *aegialus* has a shorter fore-wing and the submarginal spots are more prominent, both above and beneath.

The female of f. *aegialus* was first described by Brooks (1927, *Entomologist*, **60** : 223) from Lebong Tandai, West Sumatra, but it does not appear to have been recorded yet from Malaya. A female from Selangor (Bukit Kutu, 3485 feet,

10th March 1931, *A. S. Corbet*) is similar to the Lebong Tandai female in general appearance; it differs from it in the more extensive white median markings of the fore-wing, which extend to within 5 mm. of the distal margin, and in the white areas on both wings being outwardly laved with violet.

A British Museum female of f. *aegialus* (Federated Malay States, *Mrs. F. G. Souter*, 1925) resembles the Lebong Tandai female in the more restricted white area of the fore-wing, although on both wings the white areas are outwardly tinged with violet, as in the Bukit Kutu specimen. Evidently the females of *Papilio paradoxa* are subject to considerable variation.

Papilio chaon raya subsp. n.

The Kedah race of *P. chaon* Westw. is nearest to *ducenarius* Fruh. from South Burma, but differs from it in several important respects.

♂. *Upperside.* Differs from other *chaon* races in having the white patch in space 4 of the hind-wing longer than that in space 5. *Underside.* The hind-wing white discal spots longer than in other *chaon* races and, as above, the spot in space 4 longer than that in space 5; single, prominent, short white spots in each of the spaces 1, 2 and 3 continue the discal band. The hind-wing orange, submarginal lunules of typical *chaon* are replaced by smaller grey lunules.

Wing expanse 89 mm.

Holotype. Malay Peninsula: Kedah, Pulau Langkawi, 6th September, 1932 (*A. S. Corbet*).

Three other males taken in Pulau Langkawi * and Pulau Dayang Bunting (an island in the Langkawi group), in September 1932 hardly differ from the holotype, except that the subapical band on the fore-wing beneath is almost obsolete in the Dayang Bunting specimen.

♀. *Upperside.* Similar to the ♂, but the fore-wing bears a rather narrow, indistinct, diffuse, whitish, subapical band and has two rather indistinct, diffuse, yellowish-white spots about three-fifths along the inner margin. The hind-wing has a prominent white spot in space 3, and rather obscure single spots in spaces 1 and 2, in addition to the usual prominent white discal spots of the ♂. *Underside.* Fore-wing with a broad, prominent, white subapical band consisting of four elongated spots, the wedge-shaped spot nearest the costal margin being divided by vein 9; a prominent, white, outwardly diffuse patch at the tornal angle, and a series of white, triangular, interneural, marginal dots. Hind-wing as in ♂ with an extra outer, small, white, quadrate spot in space 7 and the white discal spots in spaces 1, 2, and 3 longer and more prominent. The greyish submarginal lunules larger than in the ♂ and a series of prominent, long, white, interneural, marginal spots which are almost obsolete in the male.

Wing expanse 91 mm.

Allotype. Malay Peninsula: Kedah, Pulau Langkawi, 6th September, 1932 (*A. S. Corbet*).

Felder (1864, *Verh. zool. bot. Ges. Wien*, **14** : 320, 367) recorded *P. chaon* from Malacca and Borneo, stating that specimens from the Malay Peninsula differed from Indian examples in the narrower submarginal lunules on the hind-wing beneath. Felder also recorded *P. saturnus* Guér. from Penang and Malacca, so there is no question of his having mistaken *nephelus* for *chaon*: on the other hand, there is no evidence to suggest that *chaon* may occur in Borneo.

* *Pulau* is the Malay word for island.

Papilio iswaroides curtisi Jord.

The hitherto unknown female may be described as follows :—

♀. *Upperside.* Resembles the ♂, except for the broader fore-wings.

Underside. The greyish-white lines forming the fore-wing discal band are rather broader and more diffuse than in the ♂. Hind-wing as in the ♂, except that the large white, quadrate spots in spaces 5, 6 and 7 are appreciably longer.

Wing expanse 91 mm.

Neoallotype. MALAY PENINSULA : Pahang, Fraser's Hill (4250 feet), 8th January, 1929 (*A. S. Corbet*).

Papilio fuscus prexaspes Feld.

Papilio prexaspes Felder & Felder, 1864, *Reise Novara Rhopal.* : 107.

The female appears to be undescribed.

♀. *Upperside* as in the male.

Underside. The fore-wing differs from that of the male in the presence of a curved subapical band consisting of greyish-white, interneural streaks, and in the larger and more prominent white discal spots in spaces 1, 2 and 3.

Wing expanse 97 mm.

Neoallotype. MALAY PENINSULA : Selangor, Ayer Kuning, near Klang, 4th April, 1931 (*A. S. Corbet*).

Papilio polytes romulus Cr. and *Papilio memnon agenor* L.

Working with *Papilio polytes* in Ceylon, Fryer (1913, *Phil. Trans. Roy. Soc.*, (B) **204** : 249) reared 155 specimens from wild larvae, among which there were 66 ♂♂, 40 ♀♀ f. *cyrus*, 24 ♀♀ f. *romulus* and 25 ♀♀ f. *polytes*. The numbers I collected in Malaya between 1927 and 1932, including the Langkawi Islands, North Kedah and Pulau Tioman, and including a few odd bred specimens, were 36 ♂♂, 17 ♀♀ f. *cyrus* and 39 ♀♀ f. *polytes* (♀ f. *romulus* is confined to Ceylon and India).

Of the 21 females of *P. memnon* which I collected on the Peninsular mainland, 10 were tailed (♀ f. *distantianus*) and 11 were tailless (9 ♀ f. *esperi* and 2 ♀ f. *butlerianus*). Wallace considered ♀ f. *distantianus* to be a mimic of *P. coön*, but, although there is a general resemblance, the two species are not similar in flight; on the other hand, when in flight the tailless females present a striking resemblance to the females of *P. nox erebus* Wall. This last-named species has not yet been found on the Langkawi Islands (where *P. coön* is not uncommon), and it is interesting to record that, of the 6 *memnon* females known from these islands (3 in my collection, 2 in the Selangor Museum and 1 in the collection of Mr. H. Gunnery), all are of the form *distantianus*. If both tailed and tailless female forms of *memnon* occur in the Langkawi Islands, and in the same ratio as on the Peninsular mainland, the odds against 6 examples of the tailed form being taken consecutively over a period of years are 1 in 86, thus strongly suggesting that only ♀ f. *distantianus* is present.

Papilio doson kajanga subsp. n.

Both sexes much larger and with longer wings than in the subspecies *evemonides* Honr., from the Malay Peninsula, Sumatra, Java and Borneo.

♂. *Upperside.* Differs from *evemonides* in that the spots on both wings are larger and more elongated and in that the two green and two white spots comprising the usual hind-wing median band are not conjoined but separated by black lines.

Underside. On both wings the spots are larger and more elongated than in *evemonides*, and the hind-wing median band is composed of separate spots as above.

Wing expanse 76 mm.

Holotype. Malay Peninsula: Pahang, Pulau Tioman, 1931 (Malay Collector). Six other males taken at the same time do not differ.

♀. *Upperside.* Resembles the male except that the green spots are yellower in colour.

Underside. Markings as in the male, except that the yellow submarginal spots are larger and the pale, silvery-green markings are yellower.

Wing expanse 83 mm.

Allotype. Malay Peninsula, Pahang, Pulau Tioman, 1931 (Malay Collector).

Pieris melete ajaka Mre.

A male of *Pieris melete* in the British Museum, labelled "Perak, 1913–1923, *C. T. Johnson*," is provisionally assigned to the subspecies *ajaka* Mre.: it closely resembles specimens from Assam and Burma and is almost identical with a male from the Khasia Hills in the National Collection.

Although the exact locality is not known, this specimen may have been taken in the neighbourhood of Maxwell's Hill, where Mr. Trim Johnson did some collecting, and where there is the possibility of agricultural produce reaching the gardens from Burma.

Cepora nerissa daphna Mre.

A male of this species was recorded from Perak in 1932 (H. M. Pendlebury, 1933, *J. F.M.S. Mus.*, **17** : 381); recently, a female was presented to the British Museum by Mr. J. V. Miller, who obtained it on Pulau Langkawi in 1935. This female agrees with a series of Siamese females in the British Museum.

Cepora lea talboti subsp. n.

Mr. G. Talbot (in a letter dated 6.iii.1936) states that *C. lea aora* Pend., from the Malayan east coast island of Pulau Aor, is identical with *C. lea siamensis* Btlr. from "Siam." As Butler's type does not agree with genuine Siamese specimens of *C. lea*, it must be concluded that a mistake has been made in locality although it is difficult to understand how Butler came into possession of specimens from Pulau Aor. Males of *lea* from Pulau Aor, Pulau Tioman and the Natuna Islands are distinctive in the narrow black bordering to both wings and the much more restricted black dusting on the veins in the distal part of the fore-wing. Usually, species of insects from Pulau Tioman and Pulau Aor are identical, but, in the present instance, the Tioman race of *lea* is intermediate between *C. lea malaya* Fruh. from the mainland of Malaya and *C. lea siamensis* Btlr. from Pulau Aor. Specimens in my collection from Pulau Langkawi (2 ♂♂) and Pulau Ubin, in the Straits of Johore (♀), are not different from *malaya* from the mainland.

♂. *Upperside.* Differs from *siamensis* Btlr. in that the lower edge of the fore-wing cell is more heavily blackened and the orange colour on the hind-wing extends into space 3.

Underside. As in *siamensis*, the black distal border on both wings is broken into a narrower black margin and a black submarginal line, the veins in the intervening space being black-dusted. The fore-wing apex is coloured a deeper yellow than in *siamensis*, while the yellow and orange colouring of the hind-wing is more intense, the orange extending into space 3 as on the upperside.

Wing expanse 56 mm.

Holotype. MALAY PENINSULA: Pahang, Pulau Tioman, 1931 (Malay Collector).

♀. *Upperside.* In general appearance, nearer to *malaya* Fruh. from the Peninsular mainland than to *siamensis* Btlr. from Pulau Aor. It resembles a darkened *malaya*, but the orange colour on the hind-wing extends into the cell.

Underside. Differs from *malaya* in the broken marginal band (as in the ♂ and thereby resembling somewhat the upperside of ♀ *natuna*, Seitz, *Macrolep. Erde*, **9**, pl. 64 e (3)), and the orange colour extending to fill space 4 on the hind-wing. The fore-wing white areas are a little more restricted than in *siamensis*, but the hind-wing is less heavily black-dusted and the yellow colouring is deeper.

Wing expanse 53 mm.

Allotype. MALAY PENINSULA: Pahang, Pulau Tioman, 1931 (Malay Collector).

Ixias verna verna Druce.

Bingham (1907, *Fauna Brit. India*, **2**: 196) considered *Ixias pyrene* L. and *I. verna* to be distinct species, and stated that *verna* extended southwards to the north of the Malay Peninsula. Fruhstorfer (1910, Seitz, *Macrolep. Erde*, **9**: 158), on the other hand, finding no difference in the male genitalia of the two, concluded they were seasonal forms of one species. The only breeding experiment which I can trace refers to a single larva which produced a male *pyrene*.

In north Kedah, *verna* occurs in open secondary growth (2 ♂♂, Padang Terap, 3rd August, 1930, *A. S. Corbet*), *I. pyrene birdi* Dist. is very local in open areas in lowland primary forest in Malaya, and on some of the Malayan hills occurs a third *Ixias*, *alticola* Pend., which was described as a subspecies of the montane *I. ludekingi* Voll. from Sumatra. Although there are no differences in the male genitalia and the only difference in the androconial scales appears to be that those of *alticola* are rather smaller, I am satisfied that there are three species of *Ixias* in Malaya.

The ground-colour of the male appears to be the most satisfactory means of separating the three species, *pyrene*, *verna* and *ludekingi*: both sexes of *pyrene birdi* are chrome yellow, those of *ludekingi* are creamy-white, while the male of *verna* is creamy-white with the inner edge of the fore-wing black subapical band fringed with lemon-yellow; no Malayan females of *verna* are known, but presumably they will be of the type figured in Seitz, *Macrolep. Erde*, **9**, pl. 71 e (5).

The fore-wing orange subapical band is bright and clear in all the *pyrene* forms examined, and in *alticola*; in *verna verna* and most of the *verna* races, and in typical *ludekingi*, it is sullied and of a distinct lemon hue. The Andaman race of *verna*, *andamana* Mre., has a clear orange subapical band, although the black borders on the creamy-white ground are fringed with lemon as in other *verna* races.

Judging by material in the British Museum, *I. pyrene* extends from China

to India and Borneo, while *verna* occurs in Burma, Indo-China, Siam, the Andaman Islands and the Rhio Archipelago; *I. verna weelei* van Eecke (1912, *Notes Leiden Mus.*, **34** : 80; Sabang) from this last-named locality differs from the Kedah males in the more restricted orange patch on the fore-wing and the very broad hind-wing black border (6·0 mm. at the widest part instead of 4·5 mm. as in the Kedah males). *I. ludekingi* is known only from the mountains of Sumatra and Malaya.

Catopsilia pomona pomona F. and *C. crocale crocale* Cr.

Drosihn (1933, *Dissertation*, Halle-Wittenberg : 35) found no difference between the male genitalia of *pomona* and *crocale*, but this is not a proof of their conspecificity, for other instances can be given of species with identical genitalia known to be distinct (e.g. *Amathusia* species). I was unable to secure ova from females of *pomona* or *crocale* in captivity, but I obtained a number of larvae of these two (and of *C. pyranthe pyranthe* L.) from a large *Cassia* which was in my garden and under constant observation.

A number of batches of larvae were taken which produced only *pyranthe* and occasional small batches, often containing larvae obviously of different ages, produced all three species. In the early months of 1930 large collections were made from this particular *Cassia* bush and these produced imagines as follows :—

18 ♂♂ and 10 ♀♀ *crocale* between 11th and 15th March;
28 ♂♂ and 24 ♀♀ *crocale* between 3rd and 10th April;
12 ♂♂ and 18 ♀♀ *crocale* within a few days of 4th May.

It is quite evident that *crocale* and *pomona* are not seasonal forms of one species for both occur throughout the year in Malaya. On a number of occasions I have seen *Catopsilia* butterflies *in copula* on the *Cassia* bush (unfortunately no record of numbers was kept) and the matings were always *crocale* × *crocale* and *pomona* × *pomona*. Of the 234 *pomona* and *crocale* specimens in my collection from Malaya, no difficulty whatever was experienced in identification except in a single case of what appears to be an aberrant *crocale* ♀.

I feel certain that *pomona* and *crocale* are not conspecific in Malaya whatever may be the position in more easterly parts of their range. Were these butterflies conspecific, it seems reasonable to suppose that such dimorphism would be the result of a mendelian mechanism such as is known to operate with *Papilio polytes* and *P. memnon*. If the factor for *crocale* were dominant in both sexes, 5 of the 9 possible matings would give *crocale* only and the chance of 3 families of larvae collected at random giving *crocale* alone is about 1 in 6. On the other hand, if the factor for *crocale* is recessive in both sexes, or dominant in one sex only, the odds against conspecificity are 1 in 729. Of course, if the larvae in a batch were not the progeny of a single female, the odds in favour of *crocale* and *pomona* being specifically distinct are greatly increased.

Although *C. scylla cornelia* F. occurred in my garden, no larvae were found at any time.

Euploea F.

Euploea evalida Swinhoe (1899, *Ann. Mag. nat. Hist.*, (7) **3** : 103) from Perak, and of which *monticola* Moulton (1921, *J. F.M.S. Mus.*, **10** : 183) from Kedah is a synonym, is a species quite distinct from *E. alcathoë gardineri* Fruh., with which it flies. *E. evalida* has a longer fore-wing brand, and on the hind-wing the basal area is much darker and the marginal and submarginal

spots and streaks are whiter, broader and much more prominent. The rarer *evalida* could hardly escape notice in a series of *alcathoë*.

Examination of types in the British Museum and at Tring has clarified the position regarding the Malaysian races of the species *crameri*, *moorei* and *distanti*.

E. crameri Lucas, of which the type in the British Museum came from Borneo and not " Manilla " as stated in the original description, is a widely distributed species in which the males are a rich, velvety brown above and without a fore-wing brand. This Bornean race has received several names, and the other Malaysian subspecies which I have examined are *tenggerensis* Fruh. (Java); *heylaertsi* Mre. (Sumatra), figured in Seitz, **9**, pl. 86 d (1) ♂; and *bremeri* Feld. (= *marsdeni* Mre.) from the Malay Peninsula figured in Distant, *Rhop. Malay.*, pl. ii, fig. 4 ♂.

E. moorei Btlr. (1866, *Proc. zool. Soc. Lond.*, **1866** : 277) is smaller and neater than *crameri* and both sexes have smaller white spots : the female type from Sumatra is in the British Museum. The male of *moorei* is distinctly washed with purple above, like *crameri* it lacks a fore-wing brand, and an important difference between the two species is that the distal margin in space 1*b* of the fore-wing is distinctly concave in the three *moorei* races known to me, whereas it is evenly convex in *crameri*. The Bornean subspecies *brookei* Mre. (male type in B.M.) is very close to *crameri* above, but, on the fore-wing underside, the apical spots are smaller and the submarginal distal spots larger than in nymotypical *crameri*.

The male of *E. distanti* Mre. (male type from Sumatra in B.M.) has a short, narrow and rather obscure brand in the centre of space 1*b* on the upperside of the fore-wing. The olive-brown colouring of the upperside is distinctive, and, in the male, the fore-wing subapical white spots are smaller and the submarginal spots larger than in *crameri*. The species appears to be not uncommon in Sumatra : it is figured in Seitz, pl. 81, c (5) ♂. The Malayan subspecies *graminifera* Mre. (♂ type in B.M.), figured in Distant, *Rhop. Malay.*, pl. v, fig. 9 ♂, is very rare and I know of only two specimens beside the type. The subspecies *circuita* Swinh. from Tonkin (♂ type in B.M.) is very close to *graminifera*, but may have rather less prominent white markings. *E. core* Cr. is unrepresented in the Malay Peninsula.

E. ochsenheimeri Luc. (= *rafflesi* Mre.), is deep blackish-brown and is readily differentiated by the pointed fore-wings in both sexes, as shown in the male of the Javanese name type figured in Seitz, pl. 84 a (2). The Malayan race *singhapura* Mre. has a series of white marginal and submarginal spots on both wings, and the spot in space 7 on the fore-wing above is markedly longer and broader than that in space 8, thereby differing from *crameri* and *moorei*. The male has a narrow and rather obscure brand in space 1*b* on the upperside of the fore-wing.

Euploea moorei tiomana subsp. n.

Wing contours, size and position and nature of areas of specialised scales identical with *E. moorei* Btlr. from Sumatra.

♂. *Upperside.* Both wings purple-brown, with the fore-wing heavily violet-washed. The white spotting as in nymotypical *moorei*. The fore-wing differs from *moorei* in that the prominent subapical spots are larger, inwardly diffuse and, except for small central white patches, washed with pale violaceous. In the male holotype, the marginal series of white dots is obsolete but present and arranged as in *moorei* in a second specimen. The hind-wing marginal and submarginal spots are smaller than in *moorei*.

In general appearance, the upperside resembles that of *brookei* ♂ figured in Seitz, **9**, pl. 86 d (2), but the fore-wing subapical spots are inwardly diffuse, and the hind-wing has a submarginal series of spots in the apical half of the wing.

Underside. Marginal and submarginal white spots, and violaceous discal spots arranged exactly as in *moorei*, except that on both wings the marginal and submarginal spots are smaller.

Wing expanse 81 mm.

Holotype. Malay Peninsula: Pahang, Pulau Tioman, 1931 (Malay Collector).

A second male from the same locality has a complete series of white marginal dots on the fore-wing above and beneath.

♀. *Upperside.* Brown, very faintly washed with purple, and the basal halves of both wings darker. The arrangement of white markings very similar to that in *E. crameri heylaertsi* ♂, figured in Seitz, pl. 86 d (1), but the fore-wing is more pointed and, except for the fore-wing subapical series, the white spots are larger. The fore-wing subapical spots are very slightly diffuse on the inner edges.

Underside. The markings correspond to those of the male but are larger and more prominent: they are identical with those of *moorei* ♀, except that the hind-wing series of submarginal spots is complete in *tiomana* and incomplete in *moorei*.

Wing expanse 90 mm.

Allotype. Malay Peninsula: Pahang, Pulau Tioman, 1931 (Malay Collector).

RESULTS OF THE OXFORD UNIVERSITY EXPEDITION TO BORNEO, 1932. NOUVEAUX COLÉOPTÈRES (MALACODERMATA ET ANOBIIDAE) *

Par M. Pic.

Communicated by Dr. B. M. Hobby, F.R.E.S.

Les nouveautés etudiées dans cet article proviennent de l'expédition de l'Université d'Oxford à Bornéo, région de Sarawak et m'ont été communiquées par le British Museum (Natural History).

Malacodermata.

Fissocantharis moorei sp. n.

Angustata, parum nitida, paulo griseo-pubescens, nigro-fuliginosa, mandibulis et coxis pro parte testaceis. Capite parum elongato, postice attenuato, minute sat dense punctato, inter oculos paulo excavato, postice transverse impresso, oculis prominulis; antennis nigris, elongatis, articulo 1° elongato, 4 et sequentibus paulo latioribus, pro parte impressis; thorace parum elongato, antice attenuato et subarcuato, medio postice late et mediocre impresso, minute parum distincte punctato; elytris thorace paulo latioribus, elongatis, subparallelis, nigro-metallicis, mediocre et dense ruguloso-punctatis, intus costulatis; pedibus elongatis, tibiis anticis valde, intermediis et posticis paulo, curvatis, tarsis diverse gracilibus, unguibus fissis. Long. 7 mill.

Mt. Dulit, 2,500 feet. Primary forest.

* For a general account of this expedition, see T. H. Harrisson, 1933, *Geogr. J.*, **82** : 385, 410.

Cette espèce se reconnaitra à première vue, des espèces décrites du genre, par sa coloration générale foncée.

Discodon banksi sp. n.

Elongatum, nitidum, griseo-argenteo, infra densiore, pubescens, nigrum, thorace rufo, elytris cyaneo-metallicis. Capite sat robusto, postice paulo attenuato, minute et sparse punctato, inter oculos longe impresso et bicarinato, oculis prominulis; thorace elongato, lateraliter subsinuato, antice paulo attenuato et subarcuato, medio late longeque impresso et bigibbuloso-carinato, minute punctato; elytris thorace paulo latioribus, elongatis, subparallelis, dense ruguloso-punctatis, in disco vage costulatis; pedibus nigris, sat validis, tibiis anticis et intermediis valde arcuatis, posticis paulo curvatis, tarsis diverse fractis. Long. 10 mill.

Mt. Dulit, 4,000 feet. Moss forest.

Voisin de *D. moultoni* Pic par la structure du thorax, celui-ci était un peu plus allongé, très différent par la coloration et la grossière sculpture des élytres, les pattes entièrement foncées avec les tibias très arqués.

Silis hobbyi sp. n.

Elongata, subopaca, thorace nitidiore, pro parte griseo-holosericeo pubescens, nigro-fuliginosa, thorace rufo. Capite breve et lato, dense punctato, oculis valde ♂, mediocre ♀, validis et prominulis, mandibulis testaceis; antennis nigris, gracilibus et elongatis; thorace minute punctato, parum breve, sat lato, antice lateraliter dilatato-lobato, lobo ♂ intus arcuate impresso, lobo ♀ intus subrecte sulcato, illo antice subarcuato, postice marginato angulis posticis minutis, paulo prominulis, in disco postice impresso; elytris thorace sat latioribus, elongatis, subparallelis, minute et dense ruguloso-punctatis, vage et diverse costulatis; pedibus elongatis. Long. 5·5–6 mill.

Mt. Dulit, 4,000 feet Moss forest.*

Cette espèce très caractérisée par la particulière structure de son thorax, peut prendre place près de *S. brevis* Pic.

ANOBIIDAE.

Trichodesma griseofasciata sp. n.

Oblonga, pro parte dense luteo aut albo-griseo pubescens, nigra, antennis rufescentibus. Capite breve et lato, dense griseo pubescente, sparse granuloso, oculis prominulis, distantibus; articulis ultimis antennarum sat latis et elongatis; thorace breve, valde transverso, antice et postice distincte sinuato, postice attenuato, medio supra valde prominulo, sed postice non angulato, illo antice dense luteo pubescente, postice sparse griseo pubescente et diverse non dense granuloso; scutello griseo pubescente; elytris latis et brevibus, postice paulo attenuatis, fortiter, sat regulariter, et late impresso punctatis, nigris, apice et lateraliter postice dense luteo pubescentibus et signaturis albo-griseis ornatis, in singulo: maculis basalibus paulo distinctis, macula premediana lateralis, fasciis transversis quinque, 2ª reducta, discoidalis, 3ª externe et postice arcuata, 5ª paulo obliqua, his usque lateraliter non prolongatis; infra corpore dense griseo pubescente; pedibus validis, dense griseo pubescentibus et hirsutis. Long. environ 4·5 mill.

Mt. Dulit, 4,000 feet. Moss forest.

Espèce ayant un dessin fascié tout particulier et très caractérisé qui la distingue nettement de toutes les espéces connues. Peut se placer près de *T. nigromaculata* Pic.

* J'ai étudié un seul male et plusieurs femelles dont une fait partie de ma collection.

ON SOME ORIENTAL COSSONINAE (COL. CURC.)

By Sir Guy Marshall, C.M.G., F.R.S., F.R.E.S.

On examining some Cossoninae submitted for identification by the Forest Research Institute, Dehra Dun, it became evident that a good deal of confusion has arisen, from the standpoint of both taxonomy and nomenclature, in the genera allied to *Rhyncolus* and *Stenoscelis*; an attempt has therefore been made to re-define the limits of some of these genera more precisely.

In 1824, Germar divided the old genus *Cossonus* into two groups, which he defined; and gave the name *Rhyncolus* to the second group, but added that he did not consider it to be worthy of generic rank; in other words, he treated it as what would to-day be called a subgenus. To this subgenus he assigned two new European species, *truncorum* and *porcatus*.

In 1826, Schönherr adopted Germar's *Rhyncolus* and raised it to generic rank. Unfortunately he cited as the genotype a species which had not been included by Germar, namely, (*chloropus* Gyll. =) *ater* L., adding *lignarius* Gyll. and two other manuscript names. In 1837, he reviewed the whole genus, again citing *ater* as the genotype, and added *culinaris*, *truncorum* and *porcatus* of Germar, together with 20 other species.

In 1873, in his revision of the Cossoninae, Wollaston divided up the genus *Rhyncolus*, retaining *ater* as the genotype, and erected the genus *Stereocorynes* for *truncorum* Germ. and *Brachytemnus* for *porcatus* Germ.

Owing to the fact that Schönherr's citation was *ultra vires*, there is at present no valid genotype for *Rhyncolus*; it is therefore now proposed to adopt the first of Germar's two species, namely, *truncorum*, as the genotype. This involves the suppression of *Stereocorynes* as an absolute synonym of *Rhyncolus*.

Further confusion was caused by Bedel (1886, *Faune Col. Bass. Seine*, **6** : 196), who sank *Phloeophagus* Schönh. as a synonym of *Rhyncolus*; this was doubtless due to the fact that he was not acquainted with the genotype of *Phloeophagus* originally cited by Schönherr, namely, (*lignarius* Gyll. *nec* Marsh. =) *turbatus* Schönh. This species is quite distinct from *Rhyncolus*, as may be seen from the key given below, and *Phloeophagus* will stand as a valid genus; all the species listed in recent catalogues under the subgenus *Rhyncolus* (s. str.) should provisionally be referred to it, pending their more critical examination.

Reitter also (1898, *Verh. naturf. Ver. Brünn*, **37** : 5) erroneously sank *Brachytemnus* Woll. as a synonym of *Eremotes* Woll., from which it is quite distinct, being closely related to *Rhyncolus* and *Stenoscelis* Woll.

The following key will indicate the characters by which the foregoing genera may be distinguished from some of their allies, with special reference to the Indian fauna.

1(14). Mesosternum almost or quite on a level with the metasternum; mesosternal process much broader than prosternal process, at least as broad as a middle tibia; stria 6 on elytra not reaching base, ending behind the shoulder.

2 (5). Rostrum much longer than broad and longer than head, its base somewhat wider than the forehead.

3 (4). Intercoxal process of venter rounded, much narrower at its apex than a

hind coxa; metasternum between the coxae as long as ventrite 1 behind the coxa . . . . . *Phloeophagus* Schönh.

4 (3). Intercoxal process of venter broadly truncate, its apex nearly as broad as a hind coxa; metasternum longer than ventrite 1 *Phloeophagosoma* Woll.

5 (2). Rostrum not longer than broad and not longer than head, its base as broad as the forehead.

6 (9). Scape shorter than funicle, not reaching hind margin of eye; mesosternal process narrower than a median coxa.

7 (8). Scutellum deeply immersed below interval 2; apex of elytra broadly and deeply excised, the lateral margin widely explanate near the apex *Xenomimetes* Woll.

8 (7). Scutellum not immersed, on a level with interval 2; elytra jointly rounded at apex, lateral margin not explanate apically *Eremotes* Woll.

9 (6). Scape equal to or longer than funicle, reaching or exceeding hind margin of eye; mesosternal process as broad as a median coxa.

10(11). Front tibiae without any tooth on the lower edge; rostrum as long as broad . . . . . *Coptus* Woll.

11(10). Front tibiae with a tooth or spine on the lower edge; rostrum much broader than long.

12(13). Metepisterna parallel-sided, very broad, nearly or more than twice as wide as the adjoining epipleural margin of elytra; prothorax longer than broad; scutellum transverse; elytra not striate laterally, interval 1 not dilated basally . . . . . *Stereoderus* Woll.

13(12). Metepisterna much narrowed in the middle and there not broader than the epipleural margin of elytra; prothorax not longer than broad; scutellum elongate; elytra deeply striate throughout, interval 1 dilated from middle to base . . . . . *Miorrhinus* Mshl.

14 (1). Mesosternum strongly depressed below the level of the metasternum; mesosternal process not or only slightly wider than prosternal process and much narrower than a middle tibia; stria 6 on elytra reaching base (Rhyncolini).

15(16). Rostrum longer than broad and longer than head, its underside much longer than the oral cavity; in lateral view, the eyes set half-way between the forehead and gula or nearer the gula; forehead broader than base of rostrum and not forming a continuous curve with it; scutellum not immersed . . . . . *Rhyncolus* Germ.

16(15). Rostrum not longer than broad and not longer than head, its underside shorter than the oral cavity; eyes nearer to the forehead than to the gula; forehead narrower than base of rostrum and forming a continuous curve with it.

17(18). Scutellum not immersed; stria 2 on elytra reaching the base, intervals without granules; scrobe curving downwards well in front of eye *Brachytemnus* Woll.

18(17). Scutellum deeply immersed; stria 2 never reaching the base, intervals always granulate posteriorly; upper edge of scrobe reaching at least the lower margin of the eye . . . . . *Stenoscelis* Woll.

Wollaston cited no genotype for his *Phloeophagosoma*, and *morio* Woll., 1873, from Ceylon, is now fixed as the type.

Eremotes himalayensis Stebb., 1914, and *E. sikkimensis* Mshl., 1931, must both be transferred to *Xenomimetes*. No true *Eremotes* or *Rhyncolus* is at present known to me from India. Similarly no *Brachytemnus* occurs in that area, all the Oriental species described under this name being referable to *Stenoscelis*.

Further, I am unable to find any characters to separate *Dendroctonomorphus* Woll., 1873, from *Stenoscelis* Woll., 1861, and it is here treated as a synonym of the latter.

Key to the Palaearctic and Oriental species of Stenoscelis.

1(12). Upper margin of antennal scrobe directed towards the middle of the eye or slightly below it.
2 (3). Disk of prothorax with fine shallow longitudinally-confluent punctures, the intervals very narrow and subcarinulate . . . *strigicollis* sp. n.
3 (2). Disk of prothorax with strong separated punctures, the intervals not carinulate.
4(11). Elytra set posteriorly with sharp conical granules, interval 2 normal and complete to apex.
5 (8). Apices of elytra separated.
6 (7). Elytra posteriorly with conspicuous long erect setae which are much longer than the granules; carina on interval 9 not continued to the apex nor forming part of the apical margin, but ending as usual at the apex of interval 3; apices of elytra each with a small process *setosus* sp. n.
7 (6). Elytra posteriorly with inconspicuous setae which are not or but little longer than the granules; carina on interval 9 continued to the apex and there forming the apical margin; apices of elytra separately rounded . . . . . *submuricatus* Schönh.
8 (5). Apices of elytra jointly rounded.
9(10). Eyes distinctly convex; prothorax broadly impressed on anterior half *sellatocollis* sp. n.
10 (9). Eyes flat; prothorax not impressed . . . . . *himalayensis* Stebb.
11 (4). Elytra posteriorly with small inconspicuous granules, interval 2 * entirely obliterated on the declivity and replaced by a row of minute punctures . . . . . *ruptus* Mshl.
12 (1). Upper margin of scrobe on a level with lower margin of eye.
13(22). Eyes flat; the carina separating striae 9 and 10 continuing to ventrite 2.
14(15). Sides of prothorax with a definite carina and not or very shallowly sinuate in the middle . . . . . *muriceus* Champ.
15(14). Sides of prothorax without a definite carina, distinctly sinuate in the middle.
16(19). Stria 3 on elytra reaching the base.
17(18). Joint 1 of front tarsi much longer than 2 + 3. . . . *cephalotes* Fst.
18(17). Joint 1 of front tarsi not or but slightly longer than 2 + 3 *gedensis* Mshl.
19(16). Stria 3 on elytra not quite reaching the base.
20(21). Intervals of elytra with irregular or duplicated punctures, interval 1 not narrowing at base; prothorax with an abbreviated impunctate median line; length 4·0–4·5 mm. . . . . *muricatus* Woll.
21(20). Intervals of elytra with a single row of punctures, interval 1 narrowing sharply at base; prothorax without an impunctate median line; length 3·0–3·5 mm. . . . . *gracilitarsis* Woll.
22(13). Eyes distinctly convex; carina separating striae 9 and 10 ceasing at hind coxa . . . . . *longifolia* Stebb.

The only species omitted from this key is "*Brachytemnus*" *subasperatus* Reitt., 1898, from Lenkoran, W. Caspian, which I have not seen, but from the description it is clearly a *Stenoscelis*.

* In the original description this interval was erroneously referred to as interval 1.

Thus the only species remaining in *Brachytemnus* are *truncatus* Germ. and *pinipotens* Woll.

Stenoscelis strigicollis sp. n.

Black, not very shiny; the antennae, tarsi and tibial uncus honey-brown.

Head very closely punctate, the intervals much narrower than the punctures, the forehead without any definite median fovea and the punctures there becoming longitudinally confluent; eyes not more convex than the head. *Rostrum* parallel-sided, with dense longitudinally-confluent punctures; the upper edge of the scrobe reaching to about the middle of the eye. *Prothorax* somewhat transverse (16 : 19), widest not far from the base, gradually narrowed in front, without the usual deep lateral sinuation in the middle, abruptly narrowed at the base, and deeply constricted near the apex, the constriction continued shallowly across the disk; the dorsum with dense shallow punctures which are longitudinally confluent, the narrow intervals forming sinuous carinulae. *Elytra* cylindrical, not wider behind, 2·3 times as long as the prothorax, with well-marked striae which are equally deep throughout; the punctures in the striae small, closely set and not incising the margins of the intervals, which are about as broad as the striae and bear a single row of punctures interspersed with small granules which become sharply conical posteriorly; intervals 2–4 united and rugosely granulate at the base, so that striae 2 and 3 do not reach the base; the setae on the apical half short and subrecumbent.

Length 3·2–4·0 mm., breadth 1·0–1·1 mm.

Burma : Pyapet, Myitkyina, 3 specimens from *Eurya acuminata*, v.–vi.1931. *Type* in the British Museum; cotype in the Forest Research Institute, Dehra Dun.

The unusual sculpturing of the pronotum renders this a very distinct species.

Stenoscelis setosus sp. n.

Black, rather shiny; the antennae, tarsi and tibial uncus honey-brown.

Head comparatively finely and sparsely punctate on the vertex, the intervals being for the most part much broader than the punctures, the forehead with larger close punctures and a shallow median fovea; eyes not, or very slightly, more convex than the head. *Rostrum* narrowing slightly from base to apex, with strong punctures that have a tendency to run in longitudinal rows and may be subconfluent; the upper edge of the scrobe reaching to about the middle of the eye. *Prothorax* very nearly as long as broad, widest near the base and very gradually narrowing to the deep apical constriction, rapidly narrowed at the base, deeply sinuate laterally, and the apical margin also sinuate in the middle; the dorsum with rather variable strong separated punctures which are sometimes wider and sometimes narrower than the intervals, but which are always denser and subconfluent at the lateral margins, the disk with a shallow indefinite impression on the anterior third, so that the front margin seems to be raised. *Elytra* cylindrical, not wider behind, with deep striae throughout, the contained punctures small and close, stria 3 reaching the base; the intervals about as broad as the striae, with a single row of fine punctures and with small conical granules on the apical third only, intervals 2 and 3 broadly united at the base, the area of junction simply punctate or sometimes rugosely granulate towards the base; the apices of the elytra separately produced into a very small process; the setae on the posterior declivity unusually long and erect, more than twice as long as the granules.

Length 2·7–3·2 mm., breadth 0·7–1·0 mm.

Kashmir : Arou, 8000 ft., Lidar Valley, 5 examples from *Abies webbiana*, 14.vi.1928 (*C. F. C. Beeson*).

Type in the British Museum; cotypes in the Forest Research Institute, Dehra Dun.

The comparatively long setae and the apical processes on the elytra distinguish this species from all its Oriental congeners.

Stenoscelis sellatocollis sp. n.

Black, rather shiny, with the antennae, tarsi and tibial uncus honey-brown.

Head strongly punctate, the punctures almost as wide as the intervals, those on the forehead larger and more or less confluent, with a very shallow frontal fovea; eyes distinctly convex. *Rostrum* narrowing from base to apex, with coarse longitudinally confluent punctation; the upper edge of the scrobe reaching the eye a little below its middle. *Prothorax* very nearly as long as broad, widest near the base, gradually narrowing to the deep apical constriction, distinctly sinuate laterally in the middle, rapidly narrowed at the base, with the apical margin truncate; the dorsum with a broad shallow depression on the apical half, so that the apical margin appears to be raised, strongly punctate, the punctures as wide as the intervals in the middle of the disk, but rapidly becoming larger and closer laterally, and confluent near the margin, with a short irregular impunctate strip in the middle of the basal half. *Elytra* cylindrical, not wider behind, jointly rounded at the apex, with deep striae throughout which are closely punctate, stria 3 not reaching the base; the intervals about as wide as the striae, with a row of fine punctures and with sharply conical granules on the apical third, intervals 2–4 united at the base and there rugosely granulate; the setae on the declivity short and suberect, scarcely higher than the granules.

Length 2·5–3·5 mm., breadth 0·7–1·0 mm.

Punjab: Kaisdhar, 8500 ft., Kulu, 2 specimens, from *Abies* sp., vi.1934 (*C. F. C. Beeson*—type). Kashmir: Arou, 8000 ft., Lidar Valley, one specimen, from *Abies webbiana*, vi.1928 (*Beeson*).

Type in the British Museum; cotype in the Forest Research Institute, Dehra Dun.

In conclusion, the opportunity may be taken to draw attention to three genera which have been wrongly placed in the Cossoninae in the *Coleopterorum Catalogus*, **149**.

Dolichotelus Blkb. was regarded by its author as a link between the Cossoninae and Scolytidae; actually it is in no way related to either of these groups. The unique type bears a label by G. C. Champion to the effect that it belongs to the Trogositidae near *Nemozoma*; a conclusion with which I agree.

Gryporrhynchus Roel. is certainly not a Cossonine. It was placed by its author in the Erirrhininae, but an examination of the unique type indicates that it is nearly related to *Endaeus*, in the Tychiinae.

Togezo Kôno was placed by its author provisionally in the Tachygoninae, and from the description this appears to be a very suitable position for it; it obviously has no connection with the Cossoninae.

KEYS TO SOME INDIAN GENERA OF CARABIDAE (COL.).

VIII. THE GENERA OF THE SPHODRINI GROUP

By H. E. Andrewes, F.R.E.S.

Only a few Indian genera and species are known in this group, and all of them are confined to the Himalayas. Although there are five genera, three of them contain each a single species, so that only two specific keys are necessary. Of these three genera, two are already well known, and only a few comments on them are made below, but the third genus is a new one, which is introduced here for a species described by Fairmaire many years ago, the characters of which do not accord with those of the genus in which he placed it. Of the two remaining genera, *Sphodropsis*, with two new species, is here added for the first time to the Indian fauna, while *Pristonychus* embraces five species, of which two are new, and a variety.

Among the Carabidae, the Indian species of palaearctic genera do not as a rule fit very well into the keys which have been provided for palaearctic species, and this circumstance applies here to at least one species each in the genera *Sphodropsis* and *Pristonychus*: the differences observed have not, however, seemed sufficiently great to warrant the proposal of new genera.

Key to the genera.

1(8). Tarsal joints not longitudinally striate on the upper surface, though the meso- and metatarsal joints are sometimes laterally sulcate.
2(7). Tarsal joints 2 to 5 glabrous on the upper surface.
3(6). At least the first joint of the metatarsi pubescent on the basal half; claws neither dentate nor pectinate.
4(5). First tarsal joint pubescent on the basal half in all the tarsi, metatarsal joints laterally sulcate; mesosternum with a tooth on each side in front of the mesocoxae; metatrochanters acuminate at apex in both sexes *Sphodrus* Schell.
5(4). First tarsal joint sparsely pubescent in the metatarsi only, the joints not laterally sulcate; metatrochanters acuminate at apex in ♂, rounded in the ♀ . . . . . *Taphoxenus* Motch.
6(3). Tarsal joints all glabrous; claws pectinate . . . . . *Xestopus* gen. n.
7(2). Tarsal joints pubescent throughout on the upper surface *Pristonychus* Dej.
8(1). Tarsal joints longitudinally striate on the upper surface *Sphodropsis* Seidl.

Sphodrus Schell.

The Indian species, *S. indus* Chaud., is confined to the western Himalayas. It differs from the widely spread palaearctic species, *S. leucophthalmus* L., in having the ♂ protarsal joints undilated.

Taphoxenus Motch.

T. brucei Andr., a species of which specimens were collected by the Third Mount Everest Expedition, 1924, was described from ♀♀'s only, but there is in the British Museum a series of specimens taken by Mr. H. J. Walton at Gyangtse, 13,000 feet, comprising ♂♂'s also; in these the protarsi have three dilated joints, and the metatrochanters are acuminate at apex.

Xestopus gen. n.

Body apterous. *Head* with small but prominent eyes, two supraorbital setae on each side, antennae long and slender, reaching middle of elytra, pubescent from joint 4, joint 1 short and thick, 3 a half longer than 1 and a fourth longer than 4, labrum truncate, sexsetose, mandibles stout, ligula dilated and truncate at apex, the paraglossae separated from it on each side by a deep notch, mentum with a bifid tooth, epilobes not sharply pointed (as in *Sphodrus*), submentum deeply depressed at middle, with a single seta on each side, palpi slender, glabrous, subtruncate at apex, maxillaries with the last joint hardly shorter than the penultimate, labials with the last joint considerably shorter than the penultimate, which is bisetose. *Prothorax* cordate, the base very vaguely bordered at middle, front angles rounded, sides bisetose and widely reflexed, hind angles obtuse, normal impressions all fairly deep on the disk. *Elytra* elongate-ovate, with the basal border entire on each side up to the long scutellary striole, the striae deep, impunctate, and very clearly incised, no dorsal pores. Prosternal process unbordered, the declivity carinate, metepisterna hardly longer than wide, ventral segments, except the apical one, with two setae on each side, placed very close together; metatrochanters very short, rounded at apex, metafemora with two setae on the hind margin, tarsi glabrous, meso- and metatarsal joints not carinate, the metatarsal joints long and slender, contracted at base, protarsi ♂ with 3 dilated joints, triangular in form, though longer than wide, claws very clearly pectinate, except on the apical third, with about ten denticulations on each part.

Genotype, *Pristonychus alticola* Fairm. *Bull. Soc. ent. Fr.*, **1889**: 16. N. Burma: Mount Yeomatong. Sikkim.

Pristonychus.

Key to the species.

1 (8). Claws pectinate on the basal half; profemora more or less toothed or crenulate beneath; base of prothorax, at least to some extent, bordered. Colour of the upper surface black.

2 (3). Base of prothorax with oblique sides, so that the hind angles are very obtuse; profemora beneath with a well-marked tooth on the front carina at a third from apex, hind carina with a row of tubercles; mesotibiae curved. Length, 16–20 mm. Western Himalayas
spinifer Schauf.

3 (2). Base of prothorax truncate, hind angles right or only a little obtuse; profemora beneath with only slight teeth or tubercles; mesotibiae straight.

4 (7). Front angles of prothorax obtuse and rounded, basal angles a little obtuse; elytra ovate, widest behind middle, the scutellary striole well developed. Length, 15–21 mm.

5 (6). Upper surface rather dull; prothorax evidently wider than long; border of the elytra forming an obtuse angle at shoulder, the striae moderately impressed. Length, 16–18 mm. Western Himalayas
kashmirensis Bates.

6 (5). Upper surface moderately shiny; prothorax hardly wider than long; border of the elytra forming a sharp angle, almost a tooth, at shoulder, the striae rather fine. Length, 15–21 mm. Western Himalayas
kashmirensis Bates var. *babaulti* Andr.

7 (4). Front angles of prothorax projecting forward, acute, though a little rounded, basal angles right; elytra oval, widest at middle, the scutellary striole slight. Length, 14 mm. . . . . *tenuis* sp. n.

8 (1). Claws smooth; profemora neither toothed nor crenulate beneath; base of prothorax unbordered. Colour of the upper surface black or dark ferruginous.

9(10). Head with two supraorbital setae on each side; last ventral segment ♀ with a single seta on each side; tarsal joints moderately pubescent above. Colour dark ferruginous. Length, 15 mm. "Nepal" *brunneus* Hope.

10 (9). Head with a single supraorbital seta on each side; last ventral segment ♀ with three setae on each side; tarsal joints very sparsely pubescent above. Colour black. Length, 16–18 mm. . . . *subglaber* sp. n.

Pristonychus tenuis sp. n.

Length, 14 mm.

Black, elytra sericeous: palpi, joints 1 to 3 of antennae, and tarsi piceous; rest of antennae brown.

Body apterous. *Head* with short, rather shallow, frontal furrows, the surface slightly wrinkled behind them, neck tumid, eyes rather flat, genae inconspicuous, as long as eyes, supraorbital pores small, hind one at some little distance from eye, tooth of mentum bifid, submentum with a single seta on each side, antennae slender, reaching basal fourth of elytra, surface smooth. *Prothorax* convex, cordate, a little wider than head, very nearly as long as wide, widest at a third from apex, base finely bordered, as wide as apex, front angles acute, projecting forward, slightly rounded at apex, sides bisetose, finely bordered and slightly reflexed, vaguely explanate, more widely behind, gently rounded in front, faintly sinuate behind, the hind angles right, somewhat reflexed, and slightly rounded; median line deep on disk, not reaching extremities, front transverse impression distinct at middle, hind one formed by a short, incised line at middle, basal foveae rather shallow, diverging in front, disk smooth, basal area depressed and uneven, some rather vague puncturation round the margins. *Elytra* convex, oval, a half wider than prothorax, two-thirds longer than wide, border forming on each side a slight blunt tooth at shoulder; striae fine and finely crenulate, 1 arising in an umbilicate pore, 7 with two pores near apex, scutellary striole very slight; intervals flat, but a little convex near apex, the inner wider than the outer ones, especially towards apex, no dorsal pores, marginal series subinterrupted at middle. Microsculpture isodiametric. Underside impunctate; prosternal process bordered; metepisterna a little longer than wide; last ventral segment with a single marginal seta on each side; profemora beneath with a slight tooth at middle of the front carina, both carinae fringed with hairs, metatrochanters short, rounded at apex; tarsal joints setulose on the upper surface, claws finely denticulate on the basal half.

Punjab (*R. N. Parker*), 1 ex., which came from the collection of the Forest Research Institute, Dehra Dun, and has been placed in the British Museum.

Pristonychus subglaber sp. n.

Length, 16–18 mm.

Black: palpi, joints 2 to 11 of antennae, tibiae, and tarsi dark ferruginous.

Body apterous. *Head* with slight frontal furrows at the extremities of the clypeal suture, eyes large and moderately prominent, genae very inconspicuous, only one supraorbital pore, tooth of mentum very short, bifid, submentum with a single seta on each side, two large pores at middle between the setae, antennae reaching basal third of elytra, joint 3 sparsely setulose, surface smooth. *Prothorax* moderately convex, cordate, a little wider than head, as long as wide, widest at a fourth from apex, base slightly emarginate, unbordered, a little narrower than apex, front angles hardly projecting, somewhat rounded, sides bordered and reflexed, rounded in front, sinuate near base, front seta at the widest

point, hind one placed well before the angle, hind angles right, reflexed, and a little rounded; median line deep on disk, transverse impressions slight, basal foveae deep, almost linear, diverging a little both in front and behind, almost reaching middle, surface slightly uneven, basal area finely rugose-striate. *Elytra* moderately convex, ovate, two-thirds wider than prothorax, rather more than a half longer than wide, widest point well behind middle, border rounded at shoulder; striae rather fine and finely punctate, scutellary striole moderately long; intervals slightly convex, the even ones narrower than the odd ones towards base and apex, no dorsal pores, 5 with one or two small pores near apex, 7 with a row of small pores on apical half, adjoining stria 7, marginal series hardly interrupted. Microsculpture isodiametric, faint on the prothorax. Underside minutely and sparsely punctate; prosternal process bordered at apex only; metepisterna quite as wide as long; last ventral segment ♂ with a single marginal seta on each side, but the ♀, in addition to the marginal seta, has a pair of setae, one behind the other, on each side, nearer the middle and removed from the margin; profemora without teeth, metatrochanters rounded at apex, tarsal joints very sparsely setulose on the upper surface, the setae hardly visible, without lateral sulci, joints 1 and 2 of the meso- and metatarsi aciculate beneath, glabrous along the median line, the ♂ protarsi with 3 dilated joints, claws smooth.

Sikkim: Darjeeling, Lepchajagat, 7000 feet (*J. C. M. Gardner*), 1 ex. ♂ in the Forest Res. Inst., Dehra Dun, and Sureil, 5000 feet (*A. Alcock*), 1 ex. ♂ (much damaged) in the Indian Museum, Calcutta; Pedong (*A. Desgodins* and *L. Durel*), 2 ex. ♂♀; "from Padamtsin to Lingtou," 1 ex. ♀. (These last three specimens were sent to me by Mr. R. Oberthür.) There is also a ♀ specimen from the Bowring collection in the British Museum; this is labelled "India." The type is in my collection.

Sphodropsis.

Key to the species.

1(2). Head dilated, genae much dilated and projecting laterally further than the eyes; joint 1 of the protarsi pluristriate on the basal half only, joint 5 of the metatarsi sparsely setulose. Length, 19 mm. *physignathus* sp. n.

2(1). Head not dilated, genae inconspicuous, the eyes projecting laterally beyond them; all the tarsal joints pluristriate and glabrous. Length, 14–17 mm. . . . . *cnesipus* sp. n.

Sphodropsis physignathus sp. n.

Length, 19 mm.

Piceous: underside, palpi, femora, and pro- and epipleura brown.

Body apterous. *Head* large, wide, and rather flat, frontal foveae wide and shallow, and, with the front and clypeus, uneven, vertex smooth, labrum emarginate, eyes very small and flat, a long way from buccal fissure, paragenae largely developed, visible from above, bordered, genae much dilated, three times as long as eyes and extending further laterally, a large rounded depression on each side in front of eyes, separated outwardly by a ridge from the paragenae, and inwardly by another ridge from a longitudinal sulcus, which is dilated behind, extends a little way behind the eye, and contains the two supraorbital pores, penultimate joint of labial palpi bisetose, tooth of mentum bifid, deeply sulcate, submentum with two setae on each side, antennae cylindrical, extending well beyond base of elytra, joints 2 and 3 somewhat contracted at base, 3 a little longer than 1. *Prothorax* slightly convex, subcordate, just wider than head, a little wider than long, widest very near apex, base only vaguely bordered, a little emarginate, as wide as apex, which is also slightly emarginate, front angles inconspicuous, sides finely bordered, not reflexed, gently rounded in front, sinuate at a third from base, front seta near apex and hind one just breaking the

border before the angle (all abraded in type), hind angles sharp, right, and projecting a little laterally; median line and transverse impressions all moderately deep on disk, basal foveae large and rather shallow, with a slight oblique raised area in each, surface uneven, especially the basal area. *Elytra* elongate-oval, moderately convex, a half wider than prothorax and a little less than twice as long as wide, basal border entire, shoulders each with a blunt tooth, the widest point just behind middle, sides with only a suggestion of sinuation behind and no inner plica visible; striae rather shallow, vaguely crenulate, 7 with two pores near apex, scutellary striole rather short; intervals slightly convex, no dorsal pores, marginal series uninterrupted, surface smooth and somewhat glossy. Microsculpture of the head and elytra formed by isodiametric meshes; on the prothorax the meshes are slightly transverse and rather faint. Underside impunctate; prosternal process unbordered; metepisterna rather longer than wide; tarsal joints (except joint 5, which is somewhat setulose) glabrous on the upperside, all pluristriate, but in the protarsi the striation is on the basal half of the joints only, claws not denticulate.

Simla, 9000 feet, 1 ex. in my collection.

Sphodropsis cnesipus sp. n.

Length, 14–17 mm.

Black: palpi, joints 1 to 3 of antennae, and femora piceous.

Body apterous. *Head* with very deep frontal furrows, extending to clypeus, diverging behind, and reaching mid-eye level, the middle and sides very convex, the outer furrow adjoining the eye much dilated behind and containing the two supraorbital pores, neck somewhat dilated, paragenae well developed and visible from above, eyes small and rather flat, genae inconspicuous, about as long as eyes and not projecting so far laterally, labrum truncate, penultimate joint of labial palpi bisetose, tooth of mentum bifid, submentum with a single seta on each side, antennae cylindrical, extending a little beyond base of elytra, joint 3 a little longer than 1, surface irregularly rugose-striate. *Prothorax* convex, cordate, quite a half wider than head, about as long as wide, widest a little before middle, base wider than apex, unbordered, both slightly emarginate, front angles fairly sharp, sides very finely bordered, not reflexed, rounded in front, sinuate at about a fourth from base, front seta at a fourth from apex, hind one just within the angle, hind angles fairly sharp, slightly acute, and projecting a little laterally; median line fine, transverse impressions obsolete, basal foveae wide and shallow, surface rather vaguely rugose-punctate, disk transversely striate. *Elytra* convex, subovate, a third wider than prothorax, a half longer than wide, basal border extending inwards as far as the scutellary striole, shoulders each with a blunt, though prominent tooth, widest point well behind the middle, no sinuation behind; striae moderately impressed, very finely crenulate, 1 bending outwards and joining 2 at base, 7 with two pores near apex, scutellary striole very short; intervals slightly convex, the outer ones narrowing behind, no dorsal pores, marginal series uninterrupted, marginal channel wide behind, surface rather dull. Microsculpture of the elytra formed by conspicuous isodiametric meshes; hardly any visible on head and prothorax. Prosternal process bordered; metasternum at sides and metepisterna with some fine punctures, the latter hardly longer than wide; surface of venter vermiculate, apical segment almost smooth; all tarsal joints glabrous on the upper side and closely pluristriate throughout.

United Provinces: Dehra Dun, 2 ex.; Chakrata district, Bodyar (*S. K. Pillai*), 8000 feet, 1 ex.; Kanasar (*S. N. Chatterjee*), 7050 feet, 1 ex., Kathian (*J. C. M. Gardner*), 6960 feet, 1 ex. "ex *Quercus incana*"; Jaunsar, Deoban, 9000 feet, 1 ex. Punjab: Simla, Tharoch, Tabratach (*C. F. C. Beeson*), 10,000 feet, 1 ex. An old example in my collection is labelled "N.W.P." The other specimens are all from the Forest Research Institute, Dehra Dun, and the type has been placed in the British Museum.

DESCRIPTION OF *CHARAXES JAHLUSA GANALENSIS* SUBSP. N. FROM ABYSSINIA (LEP. RHOPALOCERA)

By Professor G. D. Hale Carpenter, D.M. (Oxford), F.R.E.S.

Through the kindness of Lord Rothschild, F.R.S., I have been able to see a series of specimens of *Charaxes jahlusa* in his collection which seems to belong to a race hitherto undescribed. They were collected by C. V. Erlanger in 1901 in the neighbourhood of the headwaters of the Ganale river in Sidamo and Bale, and make an addition to the species recorded from Abyssinia (*Trans. R. ent. Soc. Lond.*, **83** : 319–411). Pagenstecher (1902, *Jahrb. nassau. Ver. Naturk.*, **55** : 150) under the name *C. jahlusa* Trimen writes, "Es sind zahlreiche männliche und weibliche Stücke vorhanden; Von Awei 4.vi.01, Busufdu 5.vi.01, Ilani 19.iii.01, Anole 6.vi.01, Dogge 10.vi.01, Solole 12.vi.01, 14.vi.01, Umfudu 22.vi.01, Fanole 27.vi.01, Songolo 1.vii.01, Jonte 7.vii.01."

The Abyssinian specimens in some respects are nearer to the East African race *j. kenyensis* J. and T., than to *j. jahlusa* Trimen or *j. argynnides* Westw., in other respects they are nearer to *argynnides*.

Charaxes jahlusa ganalensis subsp. n.

♂. *Upper surface.* Very like that of *kenyensis* in the black markings of the apical part of the fore-wing and in ground-colour : but the apical black is not quite so pronounced as in *kenyensis*. *Under surface.* The general effect is much more uniform than in other races, with the different elements of the pattern less strongly contrasted.

♀. *Upper surface.* General appearance and ground-colour more like that of *argynnides* than of *jahlusa* or *kenyensis* ; the black markings are better developed than in *argynnides* though less than in *kenyensis*. *Under surface.* The same lack of contrasts as in the male, and absence of silver on the inner spot in area 6 of the hind-wing. Black spots not so well marked as in *kenyensis*. The female is more distinctive in appearance than the male.

On the hind-wing of *kenyensis* the silvered band which crosses the disc in an antero-posterior direction has, on its proximal side, an irregular, sharply marked, black line separating the silver band from the complicated basal pattern, to which it forms an edge. In *ganalensis* this black line is much less pronounced and parts of it may be missing, so that the line is rather an interrupted series of linear spots. The internervular streaks running inwards from the margin of the fore-wing are, as in *jahlusa*, not strongly developed : in this these two races contrast with *kenyensis* which has the internervular streaks strongly defined and dark. The comparative uniformity of tint in *ganalensis* is further shown by the innermost of the two submarginal spots, in area 6, being little different from its homologues on each side of it. In *jahlusa* this inner spot is strongly silvered and stands out sharply by contrast, and also, though perhaps to a less extent, in *kenyensis*.

♂ holotype and one paratype from Salakle, Ganale river, 6–8 June, 1901, C. V. Erlanger. Paratypes also from other localities on the Ganale river as follows : Solole, 14 June; Umfudu, 22 June; Hanole, 1 July. Also from Serofda, east of Lake Abassa, 5 February. Total, 6 ♂♂.

♀♀ from the following localities, 1901 : Daroli, Arussi Galla, 13 March; and the following on the Ganale river : Mansur, 3–4 June; Salakle, 6–8 June (two); Dogge, 9–10 June (three); Woreda, 10–11 June; Solole, 12 and 14 June (two); Fanole, 27 June; Hanole, 2 July. Total, 12 ♀♀.

I am much obliged to Mr. F. W. Goodson for his kind help.